12. The mass spectrometry cartridge according to claim 1, further comprising:

a collection disc with an internal standard; and

a semi-permeable membrane.

13. The mass spectrometry cartridge according to claim 1, wherein the solid phase extraction column comprises water-wettable material.

14. The mass spectrometry cartridge according to claim 1, wherein the sample holder comprises a metallic contact.

15. The mass spectrometry cartridge according to claim 1, further comprising a protective handle.

16. The mass spectrometry cartridge according to claim 15, wherein the protective handle comprises a prong.

17. The mass spectrometry cartridge according to claim 1, wherein the solid phase extraction column comprises material suitable for protein preconcentration.

18. The mass spectrometry cartridge according to claim 17, wherein the material suitable for protein preconcentration comprises antibody derivatized magnetic beads.

19. The mass spectrometry cartridge according to claim 18, wherein the antibody derivatized magnetic beads are configured to couple to a protein analyte.

20. The mass spectrometry cartridge according to claim 17, wherein the material suitable for protein preconcentration comprises at least one of nitrocellulose, monoclonal antibodies, polyclonal antibodies, aptamers, or combinations thereof.

21. A method for analyzing a sample comprising:

adding a sample to a cartridge, wherein the cartridge comprises

a sample holder,

a base,

a solid phase extraction column, wherein the solid phase extraction column is disposed within the sample holder,

a first absorbent unit, wherein the first absorbent unit is configured for use with a mass spectrometer, and

a second absorbent unit disposed within the base;

disposing the sample holder in a first extraction position, in which the solid phase extraction column is disposed above the second absorbent unit;

disposing the sample holder in a second elution position, in which the solid phase extraction column is disposed above the first absorbent unit;

positioning the first absorbent unit in front of a mass spectrometer pressure inlet;

applying an electrical potential to the first absorbent unit; and

analyzing the sample by mass spectrometry.

22. The method according to claim 21, wherein the sample holder is slidably disposable within the base.

23. The method according to claim 21, wherein the cartridge further comprises a cover, the cover being disposed above the solid phase extraction column.

24. The method according to claim 21, wherein the solid phase extraction column is configured for at least one sample selected from the group consisting of: blood, plasma, urine, bile, water, liquid foodstuffs, and mixtures thereof.

25. The method according to claim 21, wherein the cartridge further comprises:

a collection disc with an internal standard; and

a semi-permeable membrane.

26. The method according to claim 21, further comprising analyzing the sample by high field asymmetric waveform ion mobility spectrometry.

27. The method according to claim 26, wherein a commercial high field asymmetric waveform ion mobility spectrometry instrument is modified to allow for controlled introduction of gas-phase modifiers.

28. The method according to claim 21, wherein the solid phase extraction column comprises water-wettable material.

29. The method according to claim 21, further comprising adding an elution solvent to the solid phase extraction column.

30. The method according to claim 29, further comprising drying the solid phase extraction column.

31. The method according to claim 29, further comprising adding water to the solid phase extraction column.

32. The method according to claim 31, wherein adding water to the solid phase extraction column occurs before adding an elution solvent to the solid phase extraction column.

33. A method for analyzing a sample, comprising:

(i) adding a sample to a cartridge, wherein the cartridge comprises

(a) a sample holder,

(b) a base,

(c) a solid phase extraction column, wherein the solid phase extraction column is disposed within the sample holder,

(d) a solvent port, wherein the solvent port is disposed within the sample holder, and

(e) an absorbent unit, wherein the absorbent unit is configured for use with a mass spectrometer;

(ii) adding a solvent to the solvent port;

(iii) positioning the absorbent unit in front of mass spectrometer pressure inlet;

(iv) applying an electrical potential to the absorbent unit; and

(v) analyzing the sample by mass spectrometry.

34. A mass spectrometry cartridge, comprising:

a sample holder;

a base;

a solid phase extraction column, wherein the solid phase extraction column is disposed within the sample holder;

a solvent port, wherein the solvent port is disposed within the sample holder; and

an absorbent unit, wherein the absorbent unit is configured for use with a mass spectrometer.

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